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PATENT

Docket No.150.0110 0101

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): G. Sabde	)	Group Art Unit: 3723
	)	
Serial No.: 10/028,616	)	Examiner: S. McDonald
Confirmation No.: 6755	)	
	)	
Filed: 21 December 2001	)	
	)	
For: METHODS FOR PLANARIZATION OF GROUP VIII METAL-CONTAINING SURFACES USING FIXED ABRASIVE ARTICLE		

**RESPONSE**

Assistant Commissioner for Patents  
Washington D.C. 20231

Dear Sir:

Applicant has reviewed the Office Action mailed 31 January 2003. Detailed comments in response to the Office Action are as follows.

Claims 1-38 are pending. No claims have been amended. Reconsideration and withdrawal of the rejections are respectfully requested.

**The 35 U.S.C. §103(a) Rejections**

The Examiner rejected claims 1-38 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 6,395,194 to Russell et al. (hereinafter "Russell") in view of U.S. Pat. No. 6,261,157 to Bajaj et al. (hereinafter "Bajaj"). Applicant respectfully traverses the rejection.

Russell provides a method of removing noble metal material from a substrate having the noble metal material deposited thereon (abstract). Russell indicates that the substrate is subjected to chemical mechanical polishing with a chemical mechanical polishing composition containing abrasive polishing particles and a halide-based oxidizing agent (abstract).

Bajaj provides a selective Damascene chemical mechanic polishing (CMP) technique that is used to planarize a semiconductor device to remove surface topography (abstract). Bajaj utilizes a series of specific polishing pads, slurries, and procedures in the Damascene CMP

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technique to remove successive layers of the semiconductor device (Col. 2, lines 31-56). Bajaj indicates that a second rotating polishing pad used in the technique includes embedded abrasive particles (abstract). The abrasive grains of the second rotating polishing pad have a Mohs' hardness of at least 8 (Col. 5, lines 56-64).

Applicant respectfully submits that Russell and Bajaj fail to support a proper *prima facie* case of obviousness as, besides other things, Russell and Bajaj fail to teach or suggest all the elements recited in the claims 1, 14, and 27 of the present invention. For example, Russell fails to teach or suggest a fixed abrasive article. In addition, both Russell and Bajaj fail to teach or suggest a fixed abrasive article that includes a plurality of abrasive particles having a hardness of no greater than about 6.5 Mohs dispersed within a binder adhered to at least one surface of a backing material, as recited in claims 1, 14, and 27.

Applicant teaches that the use of a fixed abrasive article that includes abrasive particles having a hardness of no greater than about 6.5 Mohs reduce, and often eliminate, the problems of smearing and defect formation during the planarization of surfaces that include platinum (see, for example, specification page 7, lines 4-10). In contrast, Bajaj provides that the abrasive grains fixed in the second rotating polishing pad have a Mohs' hardness of at least 8 (Col. 5, lines 56-64). In addition, both Russell and Bajaj fail to recognize the relationship of the hardness of the abrasive particles recited therein to the successful polishing of Group VIII metals with a fixed abrasive article, as is done in the present invention. Thus, the cited documents fail to teach or suggest all the elements recited in claims 1, 14, and 27 of the present invention.

In addition, a suggestion or motivation to combine Russell and Bajaj cannot be found in either the documents themselves or from the knowledge of persons of ordinary skill in the art. For example, Russell or Bajaj fail to suggest or motivate one skilled in the art to combine the documents. In fact, Bajaj provides embedded and non-embedded abrasive particles for polishing specific layers of the semiconductor device in separate polishing stations. This suggests that one skilled in the art appreciates that polishing layers of a semiconductor devices is not a trivial process. As such, one skilled in the art would appreciate that a polishing system utilizing non-

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embedded abrasive particles with a polishing pad can not be simply altered to include embedded abrasive particles in the polishing pad. In addition, nothing in Russell or Bajaj would indicate that fixed abrasive articles could be successfully used to planarize a surface containing a Group VIII metal, such as platinum, as recited in claims 1-38 of the present invention. As such, there is no suggestion or motivation to combine the documents as suggested by the Examiner.

For the above reasons, Applicant submits that claims 1-38 are patentable over the combination of Russell and Bajaj. Reconsideration and withdrawal of the rejection are, therefore, respectfully requested.

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It is respectfully submitted that the pending claims 1-38 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicant's Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted,  
**Micron Technology, Inc.**

By

Mueeting, Raasch &amp; Gebhardt, P.A.

P.O. Box 581415

Minneapolis, MN 55458-1415

Phone: (612) 305-1220

Facsimile: (612) 305-1228

Customer Number 26813



26813

PATENT TRADEMARK OFFICE

Date April 30, 2003By: Ann M. Mueeting  
Ann M. Mueeting  
Reg. No. 33,977  
Direct Dial (612)305-1217CERTIFICATE UNDER 37 CFR §1.8:

The undersigned hereby certifies that this paper is being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Assistant Commissioner for Patents, Washington, D.C. 20231, on this 30th day of April, 2003, at 2:22pm (Central Time).

By: Sara E. Olson  
Name: Sara E. Olson